

Title: NOVEL  
 MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
 Inventor(s): Axel ULLRICH et al.  
 Appl. No.: 09/977,261

CTCGCTCCAATTCGCCAGCCCCACCGCCTGGGTGTCAGCCGCTCCGGAGCCCTCTGGGGGGGGGGGGGGCTGGGG 90

GCGCCCCCTGAGCAGAAACAGGAAGAACCGCTCCGTCAGTGGCACCCAGCTCCCTACCTCTGTGCCAGCCCTGGCTGTGGCA 180

GCCCATTCCCAGCTCCCCACTGTGACCACCTGCTCACTGTGCCCTCACCTGCCTCAGTTCCCTCTGGGGCCATGCCGGGGCAG 270

M A C R

SmaI

GCTCTCTGGTTCCCTGGGGGCAATTACGGCTGTGATTCTGCTGAGGAACCTCCCGGCTAGCCCCCGCTCCCTCCGACCTGGCACC 360

G S L V S W R A F H G C D S A E E L P R V S P R F L R A W H

SmaI

CCCTCCCGTCTACCCAGATGCCAACGAGCCCTGGGCCCCGGCACCCAGTGTATCACCAAATGGAGCACACCCGCCAAGCCAC 450

P P P V S A R M P T R R W A P G T Q C I T K C E H T R P K P

SstI

KpnI

GGGACCTGGCTTCCCAAGGGCACGTGGTACCATCCTGGAGCCCTGCCAGAACAGAGCTGGTACCCGTCAACCACACAGTG 540 SH 3

G E L A F R K G D V V T I L E A C E N K S W Y R V K H H T S

PvuII

GACAGGAGGGCTCTGGCACCTGGGGCTGGGGAGCCCTCTGGCACACCCAGCTCAGCTATGGGTGGTCCAC 630

G Q E G L L A A G A L R E R E A L S A D P K L S L M P W F H

PvuII PstI

GGAAGATCTGGGCCACGAGGCTGTCACCGAGCTGCCAGCTCCGACCTGGCTGTTCTGGAGCTGGGAGTCGGGGGGACCCGGG 720

G K I S G Q E A V Q Q L Q P P E D G L F L V R E S A R H P G

ClaI

ACTACGTCTGTGGCTGAGCTTGGGGGACCTCATCCACTACCCGCTGCCACCCGACGGCCACCTCACAACTGAGGGGTG 810

D Y V L C V S F G R O V I H Y R V L H R D G H L T I D E A V

TCTTCTGCAACCTCATGGACATGGTGGACCATACACCAAGGACAAGGGCTATCTGCACCAAGCTGAGACCAAACGGAAACACG 900

F F C N L M D M V E H Y S K D K G A I C T K L V R P K R K H

FIG.1A

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

Hct

PstI

GGACCAAGTCGGCCAGGAGCTGGCAGGGGGCTGGTACTGAACCTGCACCATTTGACATTGGGACACAGATCCGAGACGGAG 990  
G T K S A E E E L A R A G W L L N L Q H L T L C A Q I G E G

PSTI

SstI

AGTTGGAGCTGTCTGCAGGGTACTACCTGGGAAAGCTGGCGTAAAGAATATCAACTGTGATCTGACAGCCCAGCCCTTCCTGG 1080  
E F G A V L Q G E Y L G Q K V A V K N I K C D V T A Q A F L TK

ACGAGACCCCCGTATGACCAAGATCCAACACGAGAACCTGGTGGTCTCTGGCGTATCTGACCCACGGGCTGATTTGTCATGG 1170  
D E T A V M T K M Q H E N L V R L L G V I L H Q G L Y I V M

SmaI

PstI

ACCACGTACCAAGCCAAACCTCGTAACTTCTGCCGACCCGGCTCGAGCCCTCGAACACCCCTCACCTCTGCAGTTCTCTGG 1260  
E H V S K G N L V N F L R T R G R A L V N T A Q L L Q F S L

HindIII

ACCTGGGGACGGCATCGACTACCTGGAGACCAAGAACCTGGCACCGGACCTGGCCCCCGAACATCTGGTCTCACAGGACCTGG 1350  
H V A E G M E Y L E S K K L V H R D L A A R N I L V S E D L

TGCCCAAGCTAGCGACTTGGCTGGCAAACCGGAGCCGAGGGCTACACTCAAGCGCTGGCGTCAACTGGACGGGGGGAGG 1440  
V A K Y S D F G L A K A E R K G I D S S R L P V K W T A P E

NdeI

CTCTCAAACACGGGAAGTCACCAAGTCGGATGTCGGAGTTGGCTGGCTCTGGACCTGGACGGCTCTCATATGGACGGCTCCG 1530  
A L K H G K F T S K S D V W S F G V L L W E V F S Y G R A P

KpnI

ACCCCTAAAATGCACTGAAGAGCTGCGAGGGCTGGAGAAGGGTACCGCATGAAACCCCCCGAGGGCTGTCAGGGGGCTGCACG 1620  
Y P K M S L K E V S E A V E K G Y R M E P P E G C P G P V H

PvuII

SmaI

TCCTCATGAGCAGCTGGAGCCAGGCCCCCCCCCCCCACCCCTCCGCAAACCTGGCGAGAACCTGGCCCCGGAGCTACCCAGTG 1710  
Y L M S S C W E A E P I A R R P P F R K L A E K L A R E L R S

FIG.1B

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

CAGGTCCCCAGCCTCCCTCTCAGGGCAGGACGCCGACCGTCCACCTGCCCGAAGCCAGGAGCCCTGACCC<sup>C</sup>ACCCCGT<sup>C</sup>CCGCCCT 1800  
A G A P A S V S G Q D A D G S T S P R S Q E P  
  
TGGCCCCAGAGGACCCAGAGACTGGAGAGTGGCCGTGGGGCACTGACCACCCCAAGGAGGCTCCAGGGGGCAACTCATCCTCTCG 1890  
  
TCCCCACAGCACGGGCTGGCCACCTAGGGGCCTGGCCGGCCCTGGACACCCAGACCTGCCAAGGATGATGCCATAAACACCC 1980  
  
ATTCTAAGGACTCTAAAAAA 2000

FIG.1C

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

CCGCTTTGCTTACACCTTGACAGTCAAAG ACCGACCCACATGTATACTTCCGCTTAGCCAGT AGGATGATAATGGATACA 90  
M D T

AAATCTATTCTAGAACAACTTCTCTAAAAGATCACAGAAAAGAAAATGTCACCAATAATTACAAACACGGCTTTCTTTG 180  
K S I L E E L L L K R S Q Q K K M S P N N Y K E R L F V L

ACCAAAACAAACCTTCCTACTATGAATATGACAAATGAAAAGGGCAGCAGAAAAGGATCATTCAAATTAAAGAAAATCAGATGTG 270  
T K T N L S Y Y E Y D K M K R G S R K G S I E I K K I R C V

GAGAAAGTAAATCTGAGGAGCAGACCCCTGAGAGAGACACTACCCATTTCACATTCTCTATAAACATGGCTCTCTATGCTATGCA 360  
E K V N L E E Q T P V E R Q Y P F Q I V Y K D G L L Y V Y A PH

TCAAATGAAGAGAGCCGAACTCAGTCGAAAGCATTACAAAAGACATAAGGGTAACCCCCACCTGCTGCTCAACTACCATACTGG 450  
S N E E S R S Q W L K A L O K E I R G N P H L L V K Y H S G

TTCTTCGACCGGAACCTCCCTGTTGCCACCAAGCCTGTAAGCAGCCCCACCGATGACCTCTGGAAACATGCTAATCTGCAT 540  
F F V D G K F L C C Q Q S C K A A P G C T L W E A Y A N L H

ACTGCACTCAATGAAGAGAAACACAGACTCCCACCTCCAGACAGACTGCTGAACATACCTGGCACTTCTGTTCTCAAATGGAT 630  
T A V N E E K H R V P T F P D R V L K I P R A V P V L K M D

GCACCATCTCAACTACCACTCTAGCCAAATGACAACGAATCAAAGAAAATGCTCCAGCCACCATCTCAACTACCACTCTA 720  
A P S S S T T L A Q Y D N E S K K N Y G S Q P P S S S T S L SH3

GCGCAATATGACACCAACTCAAAGAAAATGCTCCAGCCAAACTCAACATGCACTATTCAGGAAAGACTTCCCTGACTGG 810  
A Q Y D S N S K K I Y G S Q P N F N M Q Y I P R E D F P D W

TGGCAACTAAGAAAATGAAAATGACAGCAGCAGCACTGAAGATGTTGCAACGACTAACCAAAAGAAAATGCAATCACACCCTCA 900  
W Q V R K L K S S S S E D V A S S N Q K E R N V N H T S

AAGATTCTGCAATTCCCTGACTCAAGTTCATCTGAAGAACGAAAACCTGATCATTACTGCTTGGCTGCTAACATCTCCAGA 990  
K I S W E F P E S S S S E E E E N L D D Y D W F A G N I S R

TCACAATCTGAACAGTTACTCACACAAAAGGAAAAGAACGACCATTTATGGTACAAATTGCGCAACTGGGAATGTCACACAGTGTCC 1080  
S Q S E Q L L R Q K G K E G A F M V R N S S Q V G M Y T V S SH4

TTATTTAGTAACGCTGAAATGATAAAAACCAACTGTCACACATTACCACTGCATACAAATGCTGAGAACAAATTACCTGGCAGAA 1170  
L F S K A V N D K K G T V K H Y H V H T N A E N K L Y L A E

FIG.2A

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

AACTACTGTTTGATCCATTCAAAGCTTATTCAACACAATTCAAGGGCATGATCACACGGCTCCGCCACCCGTGTCA 1260  
N Y C F D S I P K L I H Y H Q H N S A G M I T R L R H P V S

ACAAAGCCAACAAGCTCCCCACTCTGTCTCCCTCGGAATCGAATCTCGGAAC TGAAAAGACAACAGATTACCTGTCAACGGCTG 1350  
T K A N K V P D S V S L G N G I W E L K R E E I T L L K E L

GGAAGTGGCCACTTTGACTCGTCACCTGGCAACTGGAACGGGCACTATGATGTGCTTAAGATGATCAAGGAGGGCTCCATGTCA 1440  
G S G Q F G V V Q L G K W K G Q Y D V A V K M I K E G S M S

GAAGATGAATTCTTCAGGAGGCCACACTATGATAACTCAGCCATCCAACCTGGTTAAATTCTATGACTGTCTCAAACGAATAC 1530  
E D E F F Q E A Q T M M K L S H P K L V K F Y G V C S K E Y

CCCATACTACATACTGACTGAATATAACCAATGGCTGCTGAAATTACCTGAGACTCACGGAAAAGGACTTGACCTCCAGCTC 1620 TK  
P I Y I V T E Y I S N G C L I N Y I R S H G K G L E P S Q L

TTAGAAATGTGCTACGATGTCGTGAACCCATGGCTTCTGGAGAGTCACCAATTCAACACGGGACTTGCTGCTGTAACCTG 1710  
L E M C Y D V C E G M A F L E S H Q F I H R D L A A R N C L

GTGGACAGAGATCTCTGTGAAACTATCTGACTTTGAATGACAAGGTATGTTCTGATGACCACTATGTCAGTCACTCCGAACAAAG 1800  
V D R D L C V K V S D F G M T R Y V L D D Q Y V S S V G T K

TTTCCACTCAACTGGTCACCTCCACACCTCTTCAATTCAAAATACACCACCAAGTCAGACCTATGGCATTGGATCTGATGTGC 1890  
F P V K W S A P E V F H Y F K Y S S K S D V W A F G I L M W

GAGGTGTTACGCTGGGAACGACCCATGACTTGTATGACAACCTCCAGGTGCTCTGAACCTCTCCACGGGACACGGCTTACCGG 1980  
E V F S L G K Q P Y D L Y D N S Q V V L K V S Q G H R L Y R

CCCCACCTGGCATGGACACCATCTACAGATCATGACAGCTGGCACGCTCCAGAAAAGCTCCACATTCAACACTCCTG 2070  
P H L A S D T I Y Q I M Y S C W H E L P E K R P T F Q Q L L

TCTTCATTGAACTTCCGGAAAAGACAAGCATGAAAGAAATTAGGAGTGCTGATAAGAATGAATAGATGCTGGCCAGCATT 2160  
S S I E P L R E K D K H .

TTCATTCAATTAAAGAAACTACCAACCCATAATGTAATTACCTACTTTAAACTCTTCTCTGATATTCTATTATTAGAAATCAA 2250

CAACCCAGGAAACAAAGATCCCTGAAATTAGCTAAATTAGTAATTGTTATGCTGCCCTGATATAACACTTCCAGCCTATA 2340

GCAGAAGCACATTCAACTGCAATATAGAGACTGTGTCATGTAAGACTGACCAACTGAAAATTACTTATTGATATTCAATT 2430

CTTTCTTATATTGTCATTGTCACAACAATTAAATACTACCAAGTACAAAAAAAAAAAAAAA 2500

FIG.2B

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

CCCCACTCGTCAAAGACAGGAACAGACTTGAAACACGGGGAGACCTCTGGAAACGAAACACGTCCACGTTTACCAACCCATAAGAAC 90  
AAAAGACACCTTCCTACTGAGCAGCTGCCAGCTCTGCTCAGTTTGCTCCGGTACCCACCTCCAGGACAAACCAACCGTAAG 180  
TCTCTCCAGGTAGGACTTGCTGCAACCCAGCTGCTGGACTGATCTGAAACGGACTTGCATACTCTCCGAAGTATGGTACTTGGTCT 270  
M V S W C  
GACTTCAAAGTGCCTGGTGAACGAAGATAACGTCGATGCCAGAGACTAAGGGAGAGGGAGAAGCCCTGCTCTTCTCCCCACCAAC 360  
GCACAATGACCAACATCTGTCAGACGCTCTGGACTACCTAGAACCTATCTCCCTGTTTCCACGGAGGCAGAACAGTCAACCGTGA 450  
M S N I C Q R L W E Y L E P Y L P C L S T E A D K S T V  
TTGAAAATCCAGGGGCCTTGCTCTCCCACTCACAGACCCATGCCACTACTTTGTCCTTCTTGTATTACCAAGCTGGACTGCTG 540  
I E N P G A L C S P Q S Q R H G H Y F V A L F D O Y Q A R T A  
AGGACTTGACCTCCGACCGAGTGACAAACTCAACTTCTGCACACTTTGCATGACGGCTGGCTGTTGCCAGACACTTGAGAAAAGAC 630 SH 3  
E D L S F R A G D K L Q V L D T L H E G W W F A R H L E K R  
GAGATGGCTCCAGTCAGCAACTACAAGCTATATCCTCTAACTACGTCGAGGACAGAACGCTACAGGCAGACCCGTGGTTCTTG 720  
R D G S S Q Q L Q G Y I P S N Y V A E D R S L Q A E P W F F  
GACCAATCGGAAGATCAGATGCAGAGAAACAATTATATTAGAAAACAAGACCGGTTCTTCTAAATCAGAGAAAGTGAAGCCAAA 810  
G A I G R S D A E K Q L L Y S E N K T G S F L I R E S E S Q SH 2  
AACGAGAATTCTCTTTAGATGGACCACTTGAACTAAAGACTACAGAATTAAAGACTGGATGAAGGGGATTTTCTCACGC 900  
K G E F S L S V L D G A V V K H Y R I K R L D E C G F F L T  
CAAGAAGAATCTTCAACACTGAACCAATTGAGCCACTACACCAAGACAACTGACGGCTGTCGTCAGCTGGAAACCATGCT 990  
R R R I F S T L N E F V S H Y T K T S D G L C V K L G K P C  
TAAAGATCCACGTCCACCTCATTGATTGCTATAAAACCGTGGACCAATGGACATAACCCCAACTCCATACAGCTCTGAAGC 1080  
L K I Q V P A P F D L S Y K T V D Q W E I D R N S I Q L L K  
GATTGGATCTCGTCAGTTGGCGAATGGAGCTGTCGAAACATACCAACTCCAGTACCAAGTGAACATAAACCAGTTCAA 1170  
R L G S G Q F G E V W E G L W N N T T P V A V K T L K P G S  
TGGATCCAATGACTTCCTGAGGGAGGCACAGATAATGAAGAACATCCAAAGCTATCCAGTTATGCTTGGACTTTAG 1260  
M D P N D F L R E A Q I M K N L R H P K L I Q L Y A V C T L

FIG.3

Title: NOVEL  
**MEGAKARYOCYTIC PROTEIN TYROSINE KINASES**  
 Inventor(s): Axel ULLRICH et al.  
 Appl. No.: 09/977,261

MKK1

MKK2

HUMAN

	MEG-01	+++	+++
MEG/ERYTH	K562	++	+
	MO7E	++	+
	HEL	+++	++
	KG-1	+	++
MYELO/MAC	HL-60	+	+
	TF-1	+	+
	ALL-1	-	+
B-CELL	RAJI	-	-
	DAUDI	-	-
	MOLT-3	-	-
T-CELL	JURKAT	-	-
EPITHELIAL	HELA	-	-

RODENT

	BM	+	+++
	SPLEEN	+++	+
	THYMUS	-	-
	LIVER	-	-
	BRAIN	+	-
RAT NEURAL	P19	+	-

FIG.4

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

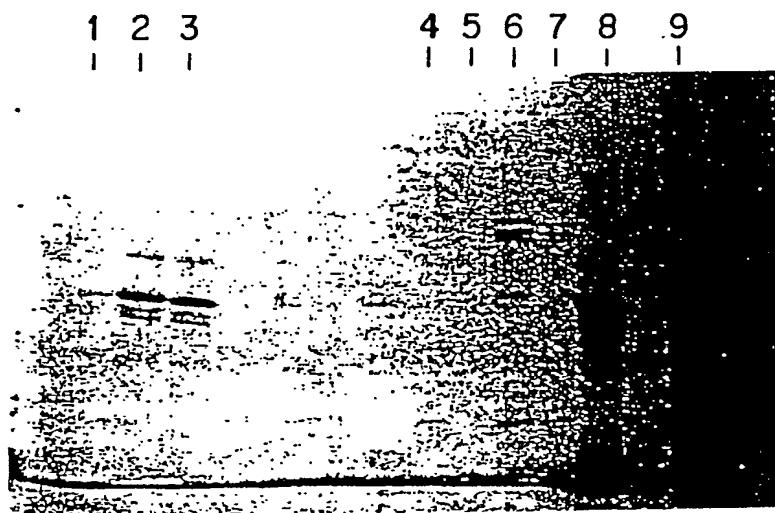


FIG. 5

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

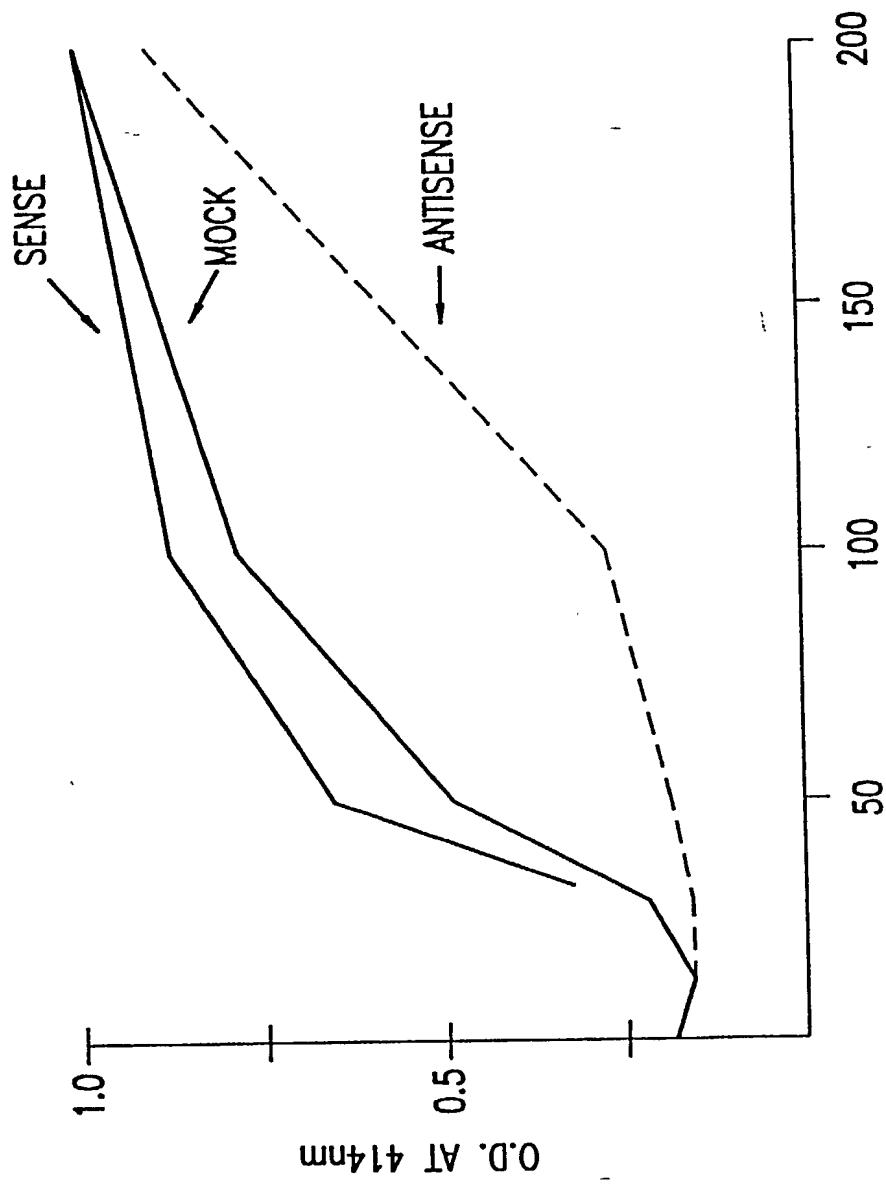


FIG.6A

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

### MKKI PROTEIN EXPRESSION

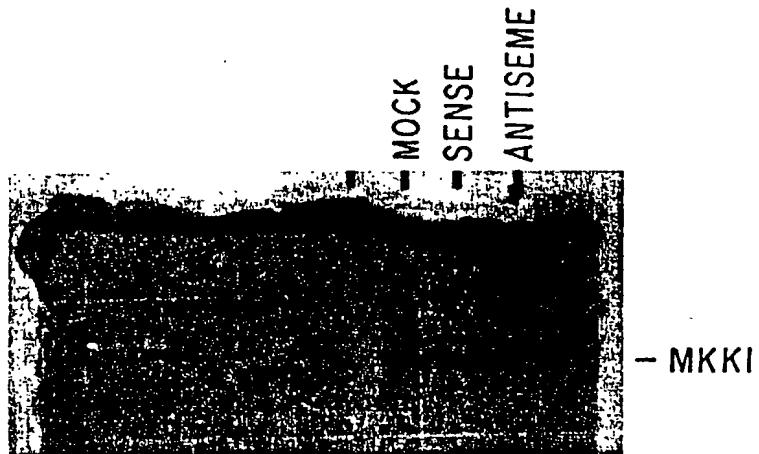
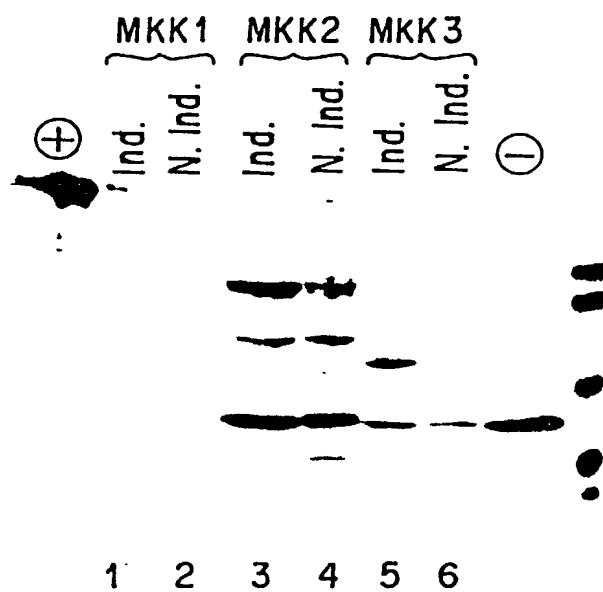


FIG. 6B

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261



1 2 3 4 5 6

F I G. 7

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

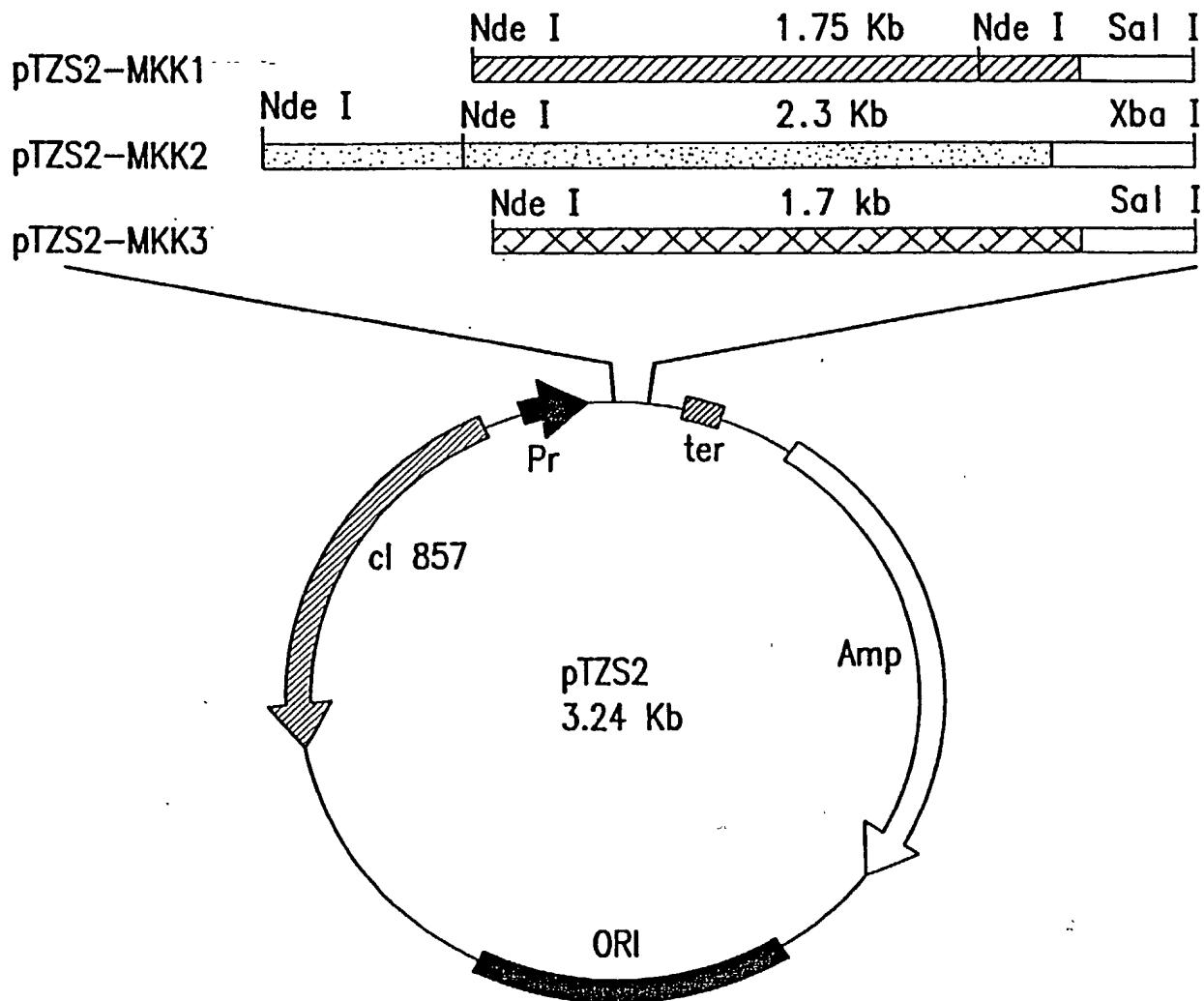


FIG.8

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

1 MAGRGSLVSWRAFHGCDSAELPRVSPRF  
1 MSAIQAA ----- MKK1 aa  
hCSK (JH0559)

31 RAWHPPPVVSARMPTRRWAPGTOCITKCEHT  
8 ----- WPSGTTECIAKYNFH MKK1 aa  
hCSK (JH0559)

61 RPKPGELAFRKGDVVVTILEACENKSWYRVK  
22 GTAEQDLPFCKGDVLTIVAVTKDPNWYKAK MKK1 aa  
hCSK (JH0559)

91 HHTSGQEGLLAAGALREREALSAADPKLSLM  
52 NKV-GREGIIPANYVQKREGVKAGTKLSLM MKK1 aa  
hCSK (JH0559)

121 PWFHGKISGQEAVQQLQPPEDEGLFLVRESA  
81 PWFHGKITREQAERLLYPPETGLFLVREST MKK1 aa  
hCSK (JH0559)

151 RHPGDYVLCVSFGRDVIHYRVLHRDGHLTI  
111 NYPGDYTLCVSCDGKVEHYRIMYHASKLSI MKK1 aa  
hCSK (JH0559)

181 DEAVFFCNLMMDMVEHYSKDKGAICTKLVRP  
141 DEEVYFENLMQLVEHYTSADGLCTRLIKPK MKK1 aa  
hCSK (JH0559)

211 KRKHGTKSAEEEALARAGWLLNLQHLLGAQ  
171 KVMEGTVAAQDEFYRSGWALNMKELKLLQT MKK1 aa  
hCSK (JH0559)

241 IGEGEFGAVLQGEYLGQKVAVKNIKCDVTA  
201 IGKGEFGDVMLGDYRGNKVAVKCIKNDATA MKK1 aa  
hCSK (JH0559)

271 QAFLDETAVMTKMQHENLVRLLGVLHQ --  
231 QAFLAEASVMTQLRHNSNLVQLLGVIIVEEKG MKK1 aa  
hCSK (JH0559)

299 GLYIVMEHVSKGNLVNFLRTGRALVNTAQ  
261 GLYIVTEYMAKGSLVDYLRSGRSVLGGDC MKK1 aa  
hCSK (JH0559)

329 LLQFSLHVVAEGMEYLESKLVRDHLAARNI  
291 LLKFSLDVCEAMEYLEGNNFVHRDHLAARNV MKK1 aa  
hCSK (JH0559)

359 LVSEDLVAKVSDFGLAKAERKGLDSSRLPV  
321 LVSEDNVAKVSDFGLTKEASSTQDTGKLPLV MKK1 aa  
hCSK (JH0559)

FIG.9A

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

389 K W T A P E A L K H G K F T S K S D V W S F G V L L W E V F MKK1 aa  
351 K W T A P E A L R E K K F S T K S D V W S F G I L L W E I Y hCSK (JH0559)

419 S Y G R A P Y P K M S L K E V S E A V E K G Y R M E P P E G MKK1 aa  
381 S F G R V P Y P R I P L K D V V P R V E K G Y K M D A P D G hCSK (JH0559)

449 C P G P V H V L M S S C W E A E P A R R P P F R K L A E K L MKK1 aa  
411 C P P A V Y E V M K N C W H L D A A M R P S F L Q L R E Q L hCSK (JH0559)

479 A R E L R S A G A P A S V S G Q D A D G S T S P R S Q E P MKK1 aa  
441 E H - - - - - I K T H E L H - - - - - L hCSK (JH0559)

FIG.9B

Title: NOVEL  
 MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
 Inventor(s): Axel ULLRICH et al.  
 Appl. No.: 09/977,261

1	M D T K S I L E E L L L K R S Q Q K K K M S P N N Y K E R L	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
1	M A A - V I L E S I F L K R S Q Q K K K T S P L N F K K R L	
1	M N N F I L L E E Q L I K K S Q Q K R R T S P S N F K V R F	
1	M M V - - - - -	
31	F V L T K T N L S Y Y E -- Y D K M K R G S R K G S I E I K	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
30	F [L] L T V H K L S Y Y E Y D F E R [G] R R G S K K G S I D V E	
31	F V L T K A S L A Y F E D R - - H G K K R T L K G S I E L S	
4	- - - - -	
59	K I R C V E K V N L E E Q T P V E R Q - - - - -	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
60	K I T C V E T V V P E K N P P P E R Q I P R R G E E S S E M	
59	R I K C V E I V K S D - - - - -	
4	- - - - -	
78	- - - - - Y P F Q I V Y K D G L L Y V Y A S N E E	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
90	E Q I S I I I E R F P Y P F Q V V Y D E G P L Y V F S P T E E	
70	- - I S I P C H Y K Y P F Q V V H D N Y L L Y V F A P D R E	
4	- - - - - S F P V K I N F H S S P - - - - - Q	
98	S R S Q W L K A L Q K E I R G N P H L L V K Y H S G F F V D	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
120	L R K R W I H Q L K N V I R Y N S D L V Q K Y H P C F W I D	
98	S R Q R W V L A L K E E T R N N N S L V P K Y H P N F W M D	
17	S R D R W V K K L K E E I K N N N N I M I K Y H P K F W A D	
128	G K F L C C Q Q S C K A A P G C T L W E A Y A N L H T A V N	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
150	G Q Y L C C S Q T A K N A M G C Q I L E N R N G S L K P G S	
128	G K W R C C S Q L E K L A T G C A Q Y D - - - - - P	
47	G S Y Q C C R Q T E K L A P G C E K Y N L F E S S I - - -	
158	E E K H R V P T F P D R V L K I P R A V P V L K M D A P S S	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
180	S H R K T K K P L P P - - - T P E E D Q I L K K P L P P E	
149	T K N A S K K P L P P - - - T P E D N R - - - - -	
73	- - - - R K T L P P - - - A P E - - - I K K R R P P -	
188	S T T L A Q Y D N E S K K N Y G S Q P P S S S T S L A Q Y D	MKK2 aa hAkt (X58957) hTKT (L10717) mTec (X5663)
206	P A A A P V S T S E L K K - - - - - V V A L Y D	
166	- - - R P L W E P E E T V - - - - - V I A L Y D	
89	P P I P P E E E N T E E I - - - - - V V A M Y D	

FIG.10A

Title: NOVEL  
 MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
 Inventor(s): Axel ULLRICH et al.  
 Appl. No.: 09/977,261

218	S N S K K I Y G S Q P N F N M Q Y I P R E D F P - D W W Q V	MKK2 aa
225	Y M P M N A N D L Q L R K G D E Y F I L E E S N L P W W R A	hAtk (X58957)
182	Y Q T N D P Q E L A L R R N E E Y C L I D S S E I H W W R V	hTKT (L10717)
108	F Q A T E A H D L R L E R G Q E Y I I L E K N D L H W W R A	mTec (X5663)
247	R K L K S S S S S E D V A S S N Q K E R N V N H T T S K I S	MKK2 aa
255	R D -- K N G Q E G Y I P S N Y V T E - A - - - - -	hAtk (X58957)
212	Q D -- R N G H E G Y V P S S Y L V E K S - - - - -	hTKT (L10717)
138	R D -- K - - - - -	mTec (X5663)
277	W E F P E S S S S E E E N L D D Y D W F A G N I S R S Q S	MKK2 aa
273	- - - - - E D S I E M Y E W Y S K H M T R S Q A	hAtk (X58957)
231	- - - - - P N N L E T Y E W Y N K S I S R D K A	hTKT (L10717)
141	- - - - - Y G W Y C R N T N R S K A	mTec (X5663)
307	E Q L L R Q K G K E G A F M V R N S S Q V G M Y T V S L F S	MKK2 aa
292	E Q L L K Q E G K E G G F I V R D S S K A G K Y T V S V F A	hAtk (X58957)
250	E K L L L D T G K E G A F M V R D S R T A G T Y T V S V F T	hTKT (L10717)
154	E Q L L R T E D K E G G F M V R D S S Q P G L Y T V S L Y T	mTec (X5663)
337	K - A V N D K K G T V K H Y H V H - - T N A E N K L Y L A E	MKK2 aa
322	K S T - G D P Q G V I R H Y V V - - C S T P Q S Q Y Y L A E	hAtk (X58957)
280	K A V V S E N N P C I K H Y H I K E T N D N P K R Y Y V A E	hTKT (L10717)
184	K F G - G E G S S G F R H Y H I K E T A T S P K K Y Y L A E	mTec (X5663)
364	N Y C F D S I P K L I H Y H Q H N S A G M I T R L R H P V S	MKK3 aa
349	K H L F S T I P E L I N Y H Q H N S A G L I S R L K Y P V S	hAtk (X58957)
310	K Y V F D S I P L L I N Y H Q H N G G G L V T R L R Y P V C	hTKT (L10717)
213	K H A F G S I P E T I E Y H K H N A A G L V T R L R Y P V S	mTec (X5663)
394	T K A N K V P D S V S L G N G I W E L K R E E I T L L K E L	MKK2 aa
379	Q Q N K N A P S T A G L G Y G S W E I D P K D L T F L K E L	hAtk (X58957)
340	F G R Q K A P V T A G L R Y G K W V I D P S E L T F V Q E I	hTKT (L10717)
243	T K G K N A P T T A G F S Y D K W E I N P S E L T F M R E L	mTec (X5663)
424	G S G Q F G V V Q L G K W K G Q Y D V A V K M I K E G S M S	MKK2 aa
409	G T G Q F G V V K Y G K W R G Q Y D V A I K M I K E G S M S	hAtk (X58957)
370	G S G Q F G L V H L G Y W L N K D K V A I K T I R E G A M S	hTKT (L10717)
273	G S G L F G V V R L G K W R A Q Y K V A I K A I R E G A M C	mTec (X5663)

FIG.10B

Title: NOVEL  
 MEGAKARYOCYTIC PROTEIN TYROSINE KINASES  
 Inventor(s): Axel ULLRICH et al.  
 Appl. No.: 09/977,261

454	E D E F F Q E A Q T M M K L S H P K L V K F Y G V C S K E Y	MKK2 aa hAkt (X58957)
439	E D E F I E E A K V M M N L S H E K L V Q L Y G V C T K Q R	hTKT (L10717) mTec (X5663)
400	E E D F I E E A E V M M K L S H P K L V Q L Y G V C L E Q A	
303	E E D F I E E A K V M M K L T H P K L V Q L Y G V C T Q Q K	
484	P I Y I V T E Y I S N G C L L N Y L R S H G K G L E P S Q L	MKK2 aa
469	P I F I I T E Y M A N G C L L N Y L R E M R H R F Q T Q Q L	hAkt (X58957)
430	P I C L V F E F M E H G C L S D Y L R T Q R G L F A A E T L	hTKT (L10717)
333	P I Y I V T E F M E R G C L L N F L R Q R Q G H F S R D M L	mTec (X5663)
514	L E M C Y D V C E G M A F L E S H Q F I H R D L A A R N C L	MKK2 aa
499	L E M C K D V C E A M E Y L E S K Q F L H R D L A A R N C L	hAkt (X58957)
460	L G M C L D V C E G M A Y L E E A C V I H R D L A A R N C L	hTKT (L10717)
363	L S M C Q D V C E G M E Y L E R N S F I H R D L A A R N C L	mTec (X5663)
544	V D R D L C V K V S D F G M T R Y V L D D Q Y V S S V G T K	MKK2 aa
529	V N D Q G V V K V S D F G L S R Y V L D D E Y T S S V G S K	hAkt (X58957)
490	V G E N Q V I K V S D F G M T R F V L D D Q Y T S S T G T K	hTKT (L10717)
393	V N E A G V V K V S D F G M A R Y V L D D Q Y T S S S G A K	mTec (X5663)
574	F P V K W S A P E V F H Y F K Y S S K S D V W A F G I L M W	MKK2 aa
559	F P V R W S P P E V L M Y S K F S S K S D I W A F G V L M W	hAkt (X58957)
520	F P V K W A S P E V F S F S R Y S S K S D V W S F G V L M W	hTKT (L10717)
423	F P V K W C P P E V F N Y S R F S S K S D V W S F G V L M W	mTec (X5663)
604	E V F S L G K Q P Y D L Y D N S Q V V L K V S Q G H R L Y R	MKK2 aa
589	E I Y S L G K M P Y E R F T N S E T A E H I A Q G L R L Y R	hAkt (X58957)
550	E V F S E G K I P Y E N R S N S E V V E D I S T G F R L Y K	hTKT (L10717)
453	E I F T E G R M P F E K N T N Y E V V T M V T R G H R L H R	mTec (X5663)
634	P H L A S D T I Y Q I M Y S C W H E L P E K R P T F Q Q L L	MKK2 aa
619	P H L A S E K V Y T I M Y S C W H E K A D E R P T F K I L L	hAkt (X58957)
580	P R L A S T H V Y Q I M N H C W K E R P E D R P A F S R L L	hTKT (L10717)
483	P K L A T K Y L Y E V M L R C W Q E R P E G R P S F E D L L	mTec (X5663)
664	S S I E P L R E K D K H	MKK2 aa
649	S N I L D V M D E E S	hAkt (X58957)
610	R Q L A E I A E S - - - G L	hTKT (L10717)
513	R T I D E L V E C E E T F G R	mTec (X5663)

FIG.10C

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES

Inventor(s): Axel ULLRICH et al.

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1	MSNICQRLWE	MKK3 MPI aa
1	MGCVQCKDKEA-T---KLTERDGSLNQ-S	hFyn
1	MGCVHCKEKIS-G---KGQGGSGTGTPA-H	cYrk
1	MGSNKSKPKDA-SQR-RRSLEPAENVHG-A	hSrc
1	MGCIKSKENKS-PAI-KYRPENTPEPVST-T	hYes
1	MGCVFCKKLEP-VATAKEDAGLEGDFRSYG	hFgr
1	MGCIIKSKGKDLSLSDDGVDL-KTQPVRNTER	hLyn
1	MGSMKSK---FLQVGGNNTFSKTETSASPHC	hHck
1	MGCCGCS---HPEDDWMENIDVCENCHY	hLck
1	MGLLSSKRQVSEKGKGWSPVKIRTDQDKAPP	mBtk
11	-----YLEP	MKK3 MPI aa
26	SGYRYGTDPTPQHYPSFGVTSIPN-YNNF	hFyn
26	PPSQYDPDPT-QLSCAF--THIPD--FNNF	cYrk
28	GGGAFPASQTPSKPASADGHRGPSAAFAPA	hSrc
28	SVSHYGAEPTTVSPCPSSSAKGTAVNFSSL	hYes
30	AADHYGPDPKARPAS-SFAHIPN--YSNF	hFgr
30	TIYVRDPTSNKQQRPVPESQLLPQRFQTK	hLyn
28	PVYVPDPSTSIIKPGPNSSHNSNTPGIR---	hHck
26	PIVPLDGGKTLLIRNGSEVRD-PLVTYEGS	hLck
31	PLPPLVVVFNHIAAPPSPNQ-----	mBtk
15	YLPCLSSTEADKSTVIENPGALCSPQSQRHG	MKK3 MPI aa
54	HAA---GGQGLTVFGGVN--SSSHTGTLRT	hFyn
51	HAA---AVSPPVPFSGPGFYPCNTLQAHSS	cYrk
58	AAEP----KLFGGFNSSDTVTSPQRAG	hSrc
58	SMTPFGGSSGVTPFGGASSSFSVVPSSYPA	hYes
57	SSQAINGP-----F-----LDSGTIRG	hFgr
60	DPEE-----QG-----	hLyn
54	EAGS-----ED-----	hHck
55	NPPA-----SPLQD-----	hLck
49	DPDE-----EE-----	mBtk
45	H-----YFVALFEDYQARTAEDLSFRAGDK	MKK3 MPI aa
79	RGGTGVTLFVALYDYEARTEEDLSFHKGEK	hFyn
78	ITGGGVTLFIALYDYEARTEEDLSFQKGEK	cYrk
81	PLAGGGVTTFVALYDYESRTEEDLSFKKGERR	hSrc
88	GLTGGVTIFVALYDYEARTEEDLSFKKGERR	hYes
74	VSGIGVTLFIALYDYEARTEEDLTFTKGEK	hFgr
66	-----DIVVALYPYDGIHPDDLSFKKGEEK	hLyn
60	-----IIVVALYDYEAIIHHEDLSFQKGDQ	hHck
64	-----NLVIALHSYEPSSHGDLGFEKGEQ	hLck
55	-----RFVVALFDYAAVNDRDQLQVLKGEK	mBtk

FIG.11A

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES

Inventor(s): Axel ULLRICH et al.

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69	L Q V I D T L H E G W W F A R H L E K R R D G S S Q Q L Q G	MKK3 MPI aa
109	F Q I L N S S E G D W W E A R S L T T G E T G - - - - -	hFyn
108	F H I I N N T E G D W W E A R S L S S G A T G - - - - -	cYrk
111	L Q I V N N T E G D W W L A H S L S T G Q T G - - - - -	hSrc
118	F Q I I N N T E G D W W E A R S I A T G K N G - - - - -	hYes
104	F H I I N N T E G D W W E A R S L S S G K T G - - - - -	hFgr
90	M K V I L E E H - G E W W K A K S L L T K K E G - - - - -	hLyn
84	M V V I L E E S - G E W W K A R S L A T R K E G - - - - -	hHck
88	L R I L E Q S - G E W W K A Q S L T T G Q E G - - - - -	hLck
79	L Q V I L R S T - G D W W L A R S L V T G R E G - - - - -	mBik
99	Y I P S N Y V A E D R S L Q A E P W F F G A I G R S D A E K	MKK3 MPI aa
132	Y I P S N Y V A P V D S I Q A E E W Y F G K L G R K D A E R	hFyn
131	Y I P S N Y V A P V D S I Q A E E W Y F G K I G R K D A E R	cYrk
134	Y I P S N Y V A P S D S I Q A E E W Y F G K I T R E S E R	hSrc
141	Y I P S N Y V A P A D S I Q A E E W Y F G K M G R K D A E R	hYes
127	C I P S N Y V A P V D S I Q A E E W Y F G K I G R K D A E R	hFgr
112	F I P S N Y V A K L N T L E T E E W F F K D I T R K D A E R	hLyn
106	Y I P S N Y V A R V D S L E T E E W F F K G I S R K D A E R	hHck
110	F I P F N F V A K A N S L E P E P W F F K N L S R K D A E R	hLck
101	Y V P S N F V A P V E T L E V E K W F F R T I S R K D A E R	mBik
129	Q L L Y S E N K T G S F L I R E S E S Q K G E F S L S V L D	MKK3 MPI aa
162	Q L L S F G N P R G T F L I R E S E T T K G A Y S L S I R D	hFyn
161	Q L L C H G N C R G T F L I R E S E T T K G A Y S L S I R D	cYrk
164	L L L N A E N P R G T F L V R E S E T T K G A Y C L S V S D	hSrc
171	L L L N P G N Q R G I F L V R E S E T T K G A Y S L S I R D	hYes
157	Q L L S P G N P Q G A F L I R E S E T T K G A Y S L S I R D	hLyn
142	Q L L A P G N S A G A F L I R E S E T L K G S F S L S V R D	hHck
136	Q L L A P G N M L G S F M I R D S E T T K G S Y S L S V R D	hHck
140	Q L L A P G N T H G S F L I R E S E S T A G S F S L S V R D	hLck
131	Q L L A P M N K A G S F L I R E S E S N K G A F S L S V K D	mBik
159	- - - - G A V V K H Y R I K R L D E G G F F L T R R R I F	MKK3 MPI aa
192	W D D M K G D H V K H Y K I R K L D N G G Y Y I T T R A Q F	hFyn
191	W D E A K G D H V K H Y K I R K L D S G G Y Y I T T R A Q F	cYrk
194	F D N A K G L N V K H Y K I R K L D S G G F Y I T S R T Q F	hSrc
201	W D E I R G D N V K H Y K I R K L D N G G Y Y I T T R A Q F	hYes
187	W D Q T R G D H V K H Y K I R K L D M G G Y Y I T T R V Q F	hFgr
172	F D P V H G D V I K H Y K I R S L D N G G Y Y I S P R I T F	hLyn
166	Y D P R Q G D T V K H Y K I R T L D N G G F Y I S P R S T F	hHck
170	F D Q N Q G E V V K H Y K I R N L D N G G F Y I S P R I T F	hLck
161	I T T - Q G E V V K H Y K I R S L D N G G Y Y I S P R I T F	mBik

FIG.11B

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES

Inventor(s): Axel ULLRICH et al.

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184	S T L N E F V S H Y T K T S D G L C V K L G K P C L K I Q V	MKK3 MPI aa
222	E T L Q Q L V Q H Y S E R A A G L C C R L V V P C H K G M -	hFyn
221	D T I Q Q L V Q H Y I E R A A G L C C R L A V P C P K G T -	cYrk
224	N S L Q Q L V A Y Y S K H A D G L C H R L T T V C P T S K -	hSrc
231	D T L Q K L V K H Y T E H A D G L C H K L T T V C P T V K -	hYes
217	N S V Q E L V Q H Y M E V N D G L C N L L I A P C T I M K -	hFgr
202	P C I S D M I K H Y Q K Q A D G L C R R L E K A C I S P K -	hLyn
196	S T L Q E L V D H Y K K G N D G L C Q K L S V P C M S S K -	hHck
200	P G L H E L V R H Y T N A S D G L C T R L S R P C Q T Q K -	hLck
190	P T L Q A L V Q H Y S K K G D G L C Q K L T L P C V N L A -	mBik
214	P A P F D L S Y K T V D Q W E I D R N S I Q Q L L K R L G S G	MKK3 MPI aa
251	P R L T D L S V K T K D V W E I P R E S L Q L I K R L G N G	hFyn
250	P K L A D D L S V K T K D V W E I P R E S L Q L L Q K L G N G	cYrk
253	P Q T Q G L A --- K D A W E I P R E S L R L E V K L G Q G	hSrc
260	P Q T Q G L A --- K D A W E I P R E S L R L E V K L G Q G	hYes
246	P Q T L G L A --- K D A W E I S R S S I T L E R R I L G T G	hFgr
231	P Q --- K P W D K D A W E I P R E S I K L V K R L G A G	hLyn
225	P Q --- K P W E K D A W E I P R E S L K L E K K L G A G	hHck
229	P Q --- K P W W E D E W E V P R E T L K L V E R L G A G	hLck
219	P K --- N L W A Q D E W E I P R Q S L K L V R K L G S G	mBik
244	Q F G E V W E G L W N N T T P V A V K T L K P G S M D P N D	MKK3 MPI aa
281	Q F G E V W M G T W N G N T K V A I K T L K P G T M S P E S	hFyn
280	Q F G E V W M G T W N G T T K V A V K T L K P G T M S P E A	cYrk
280	C F G E V W M G T W N G T T R V A I K T L K P G T M S P E A	hSrc
287	C F G E V W M G T W N G T T K V A I K T L K P G T M M P E A	hYES
273	C F G D V W L G T W N G S T K V A V K T L K P G T M S P K A	hFgr
257	Q F G E V W M G Y Y N N S T K V A V K T L K P G T M S V Q A	hLyn
251	Q F G E V W M A T Y N K H T K V A V K T M K P G S M S V E A	hHck
255	Q F G E V W M G Y Y N G H T K V A V K S L K Q G S M S P D A	hLck
245	Q F G E V W M G Y Y K N N M K V A T K T L E G T M S P E A	mBik
274	F L R E A Q I M K N L R H P K L I Q L Y A V C T L E D P I Y	MKK3 MPI aa
311	F L E E A Q I M K K L K H D K L V Q L Y A V V S - E E P I Y	hFyn
310	F L E E A Q I M K R L R H D K L V Q L Y A V V S - E E P I Y	cYrk
310	F L Q E A Q V M K K L R H E K L V Q L Y A V V S - E E P I Y	hSrc
317	F L Q E A Q I M K K L R H D K L V P L Y A V V S - E E P I Y	hYes
303	F L E E A Q V M K L L R H D K L V Q L Y A V V S - E E P I Y	hFgr
287	F L E E A N L M K T L Q H D K L V R L Y A V V T R E E P I Y	hLyn
281	F L A E A N V M K T L Q H D K L V K L H A V V T K E - P I Y	hHck
285	F L A E A N L M K Q L Q H Q R L V R L Y A V V T - Q E P I Y	hLck
275	F L G E A N V M K T L Q H E R L V R L Y A V V T R E - P I Y	mBik

FIG.11C

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN TYROSINE KINASES

Inventor(s): Axel ULLRICH et al.

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304	I I T E L M R H G S L Q E Y L Q N D T G S K I H L T Q Q V D	MKK3 MPI aa
340	I V T E Y M N K G S L L D F L K D G E G R A L K L P N L V D	hFyn
339	I V T E F M S Q G S L L D F L K D G D G R Y L K L P Q L V D	cYrk
339	I V T E Y M S K G S L L D F L K G E T G K Y L R L P Q L V D	hSrc
346	I V T E F M S K G S L L D F L K E G D G K Y L K L P Q L V D	hYes
332	I V T E F M C H G S L L D F L K N P E G Q D L R L P Q L V D	hFgr
317	I I T E Y M A K G S L L D F L K S D E G G K V L L P K L I D	hLyn
310	I I T E F M A K G S L L D F L K S D E G S K Q P L P K L I D	hHck
314	I I T E Y M E N G S L V D F L K T P S G I K L T I N K L L D	hLck
304	I V T E Y M A R G C L L D F L K T D E G S R L S L P R L I D	mBik
334	MAA Q V A S G M A Y L E S R N Y I H R D L A A R N V L V G	MKK3 MPI aa
370	MAA Q V A A G G M A Y I E R M N U I H R D L R S A N I L V G	hFyn
369	MAA Q I A A G G M A Y I E R M N Y I H R D L R A A N I L V G	cYrk
369	MAA Q I A S G M A Y V E R M N Y V H R D L R A A N I L V G	hSrc
376	MAA Q I A D G M A Y I E R M N Y I H R D L R A A N I L V G	hYes
362	MAA Q V A E G M A Y M E R M N Y I H R D L R A A N I L V G	hFgr
347	F S A Q I A E G M A Y I E R K N Y I H R D L R A A N V L V S	hLyn
340	F S A Q I A E G M A F I E Q R N Y I H R D L R A A N I L V S	hHck
344	M A A Q I A E G M A F I E E R N Y I H R D L R A A N I L V S	hLck
334	M S A Q V A E G M A Y I E R M N S I H R D L R A A N I L V S	mBik
364	E H N I Y K V A D F G L A R V F K V D N E D I Y E S R H E I	MKK3 MPI aa
400	N G L I C K I A D F G L A R L I --- E D N E Y T A R Q G A	hFyn
399	D N L V C K I A D F G L A R L I --- E D N E Y T A R Q G A	cYrk
399	E N L V C K V A D F G L A R L I --- E D N E Y T A R Q G A	hSrc
406	E N L V C K I A D F G L A R L I --- E D N E Y T A R Q G A	hYes
392	E R L A C K I A D F G L A R L I --- K D D E Y N P C Q G S	hFgr
377	E S L M C K I A D F G L A R V I --- E D N E Y T A R E G A	hLyn
370	A S L V C K I A D F G L A R V I --- E D N E Y T A R E G A	hHck
374	D T L S C K I A D F G L A R L I --- E D N E Y T A R E G A	hLck
364	E T L C C K I A D F G L A R I I --- D S E Y T A Q E G A	mBik
394	K L P V K W T A P E A I R S N K F S I K S D V W S F G I L L	MKK3 MPI aa
427	K F P I K W T A P E A A L Y G R F T I K S D V W S F G I L L	hFyn
426	K F P I K W T A P E A A L F G K F T I K S D V W S F G I L L	cYrk
426	K F P I K W T A P E A A L Y G R F T I K S D V W S F G I L L	hSrc
433	K F P I K W T A P E A A L Y G R F T I K S D V W S F G I L L Q	hYes
419	K F P I K W T A P E A A L F G R F T I K S D V W S F G I L L	hFgr
404	K F P I K W T A P E A I N F G C F T I K S D V W S F G I L L	hLyn
397	K F P I K W T A P E A I N F G S F T I K S D V W S F G I L L	hHck
401	K F P I K W T A P E A I N Y G T F T I K S D V W S F G I L L	hLck
390	K F P I K W T A P E A I H F G V F T I K A D V W S F G V L L	mBik

FIG.11D

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
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424	Y E I I T Y G K M P Y S G M T G A Q V I Q M L A Q N Y R L P	MKK3 MPI aa
457	T E L V T K G R V P Y P G M N N R E V L E Q V E R G Y R M P	hFyn
456	T E L V T K G R V P Y P G M N N R E V L E Q V E R G Y R M Q	cYrk
456	T E L T T K G R V P Y P G M V N R E V L D Q V E R G Y R M P	hSrc
463	T E L V T K G R V P Y P G M V N R E V L E Q V E R G Y R M P	hYes
449	T E L I T K G R I P Y P G M N K R E V L E Q V E Q G Y H M P	hFgr
434	Y E I I V T Y G K I P Y P G R T N A D V M T A L S Q G Y R M P	hLyn
427	M E I I V T Y G R I P Y P G M S N P E V I R A L E R G Y R M P	hHck
431	T E I I V T H G R I P Y P G M T N P E V I Q N L E R G Y R M V	hLck
420	M V I I V T Y G R V P Y P G M S N P E V I R S L E H G Y R M P	mBik
454	Q P S N C P Q Q F Y N - I M L E C W N A E P K E R P T F E T	MKK3 MPI aa
487	C P Q D C P I S L H - E L M I H C W K K D P E E R P T F E Y	hFyn
486	C P G G C P P S L H - D V M V Q C W K R E P E E R P T F E Y	cYrk
486	C P P E C P E S L H - D L M C Q C W R K E P E E R P T F E Y	hSrc
493	C P Q G C P E S L H - E L M N L C W K K D P D E R P T F E Y	hYes
479	C P P G C P A S L Y - E A M E Q T W R L D P E E R P T F E Y	hFgr
464	R V E N C P D E L Y - D I M K M C W K E K A A E E R P T F D Y	hLyn
457	R P E N C P E E L Y - N I M M R C W K N R P E E R P T F E Y	hHck
461	R P D N C P E E L Y - Q L M R L C W K E R P E D R P T F D Y	hLck
450	C P E T C P P E L Y N D I I T E C W R G R P E E R P T F E F	mBik
483	L R W K L E D Y F E - T D S S Y S D A N N F I R	MKK3 MPI aa
516	L Q S F L E D Y F T A T E P Q Y Q P G E N - - - L	hFyn
515	L Q S F L E D Y F T A T E P Q Y Q P G D N - - - Q	cYrk
515	L Q A F L E D Y F T S T E P Q Y Q P G E N - - - L	hSrc
522	I Q S F L E D Y F T A T E P Q Y Q P G E N - - - L	hYes
508	L Q S F L E D Y F T S A E P Q Y Q P G D Q - - - T	hFgr
493	L Q S V L D D F Y T A T E G Q Y Q Q - - Q - - P	hLyn
486	I Q S V L D D F Y T A T E S Q Y Q Q - - Q - - P	hHck
490	L R S V L E D F F T A T E G Q Y Q P - - Q - - P	hLck
480	L Q S V L E D F Y T A T E G Q Y E L - - Q - - P	mBik

FIG.11E

Title: NOVEL MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

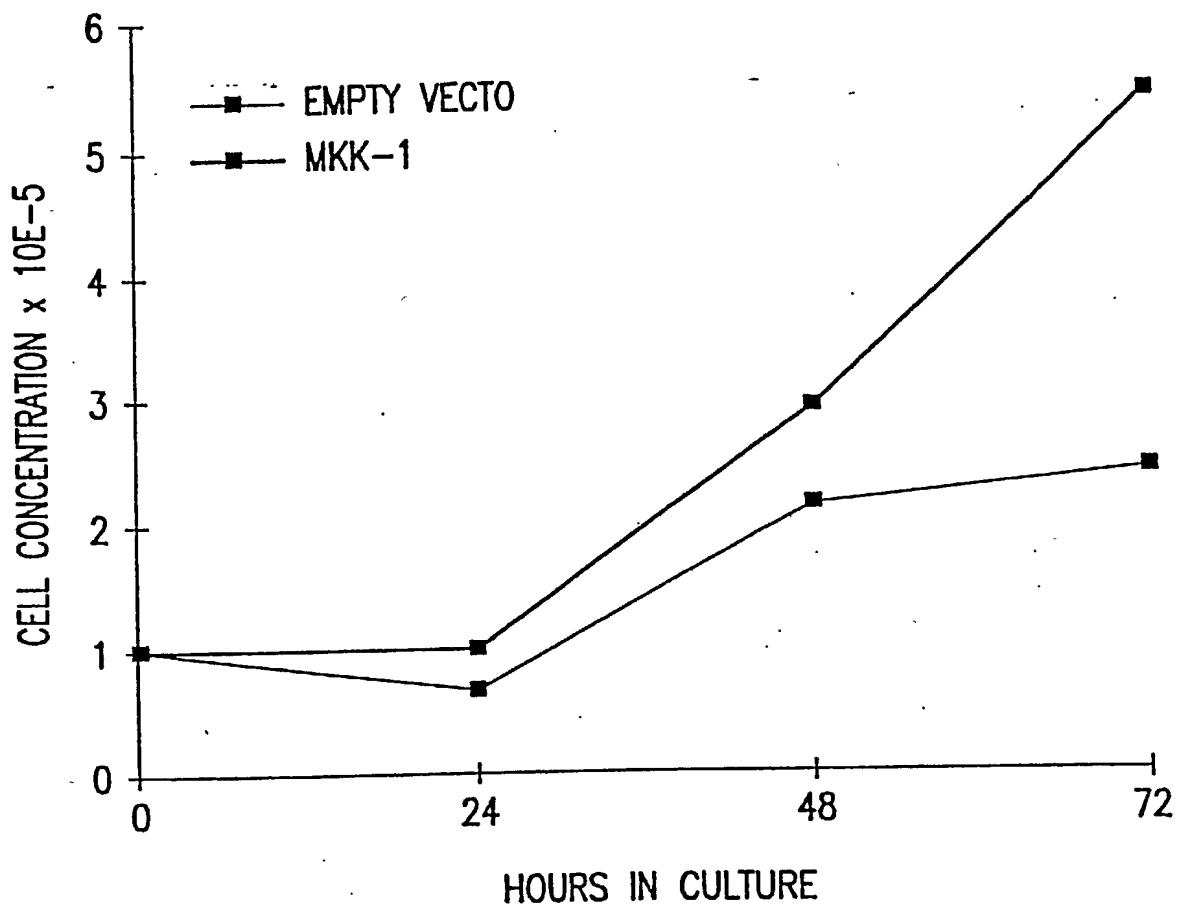


FIG.12

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

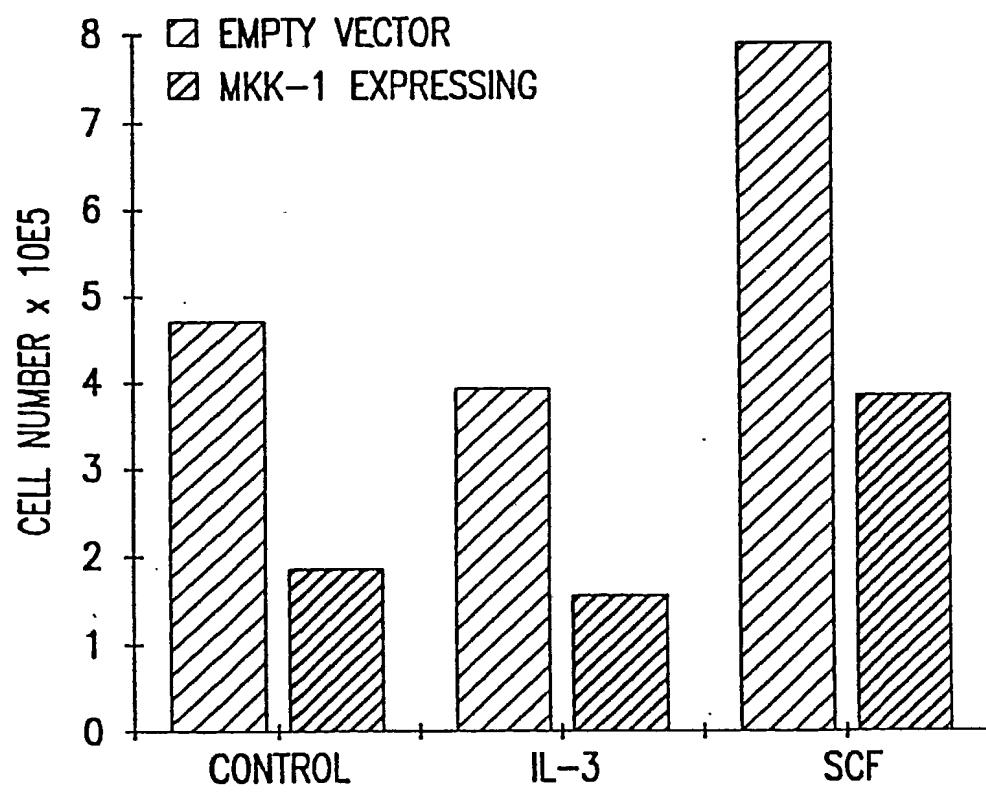


FIG.13

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

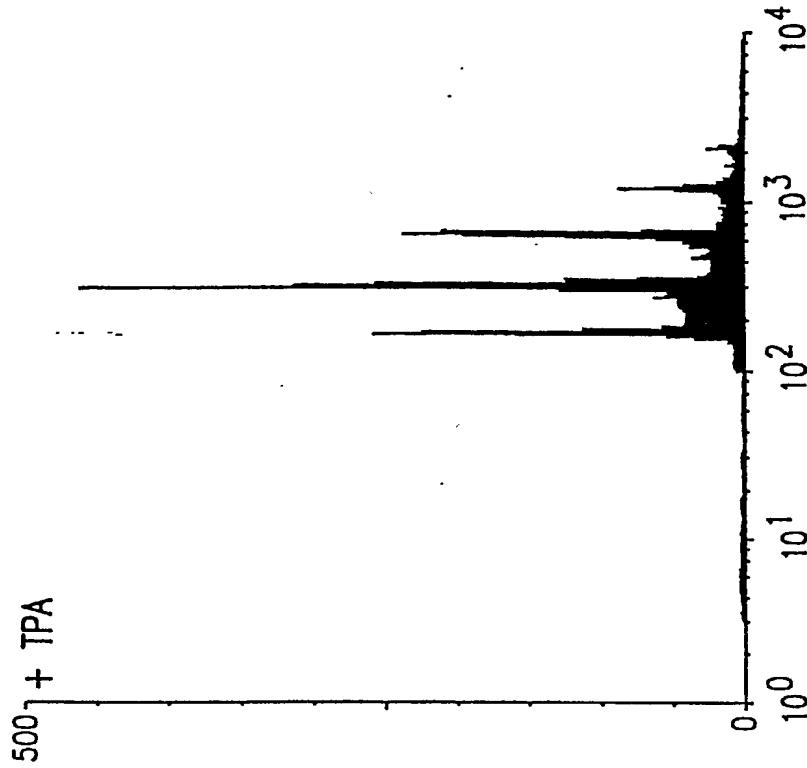


FIG. 14B

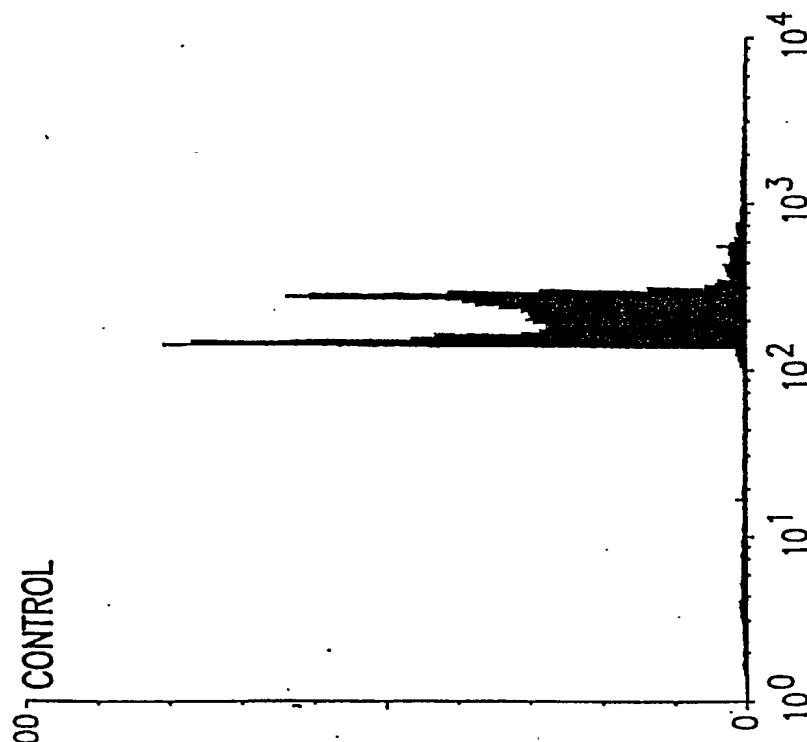


FIG. 14A

Title: NOVEL  
MEGAKARYOCYTIC PROTEIN  
TYROSINE KINASES  
Inventor(s): Axel ULLRICH et al.  
Appl. No.: 09/977,261

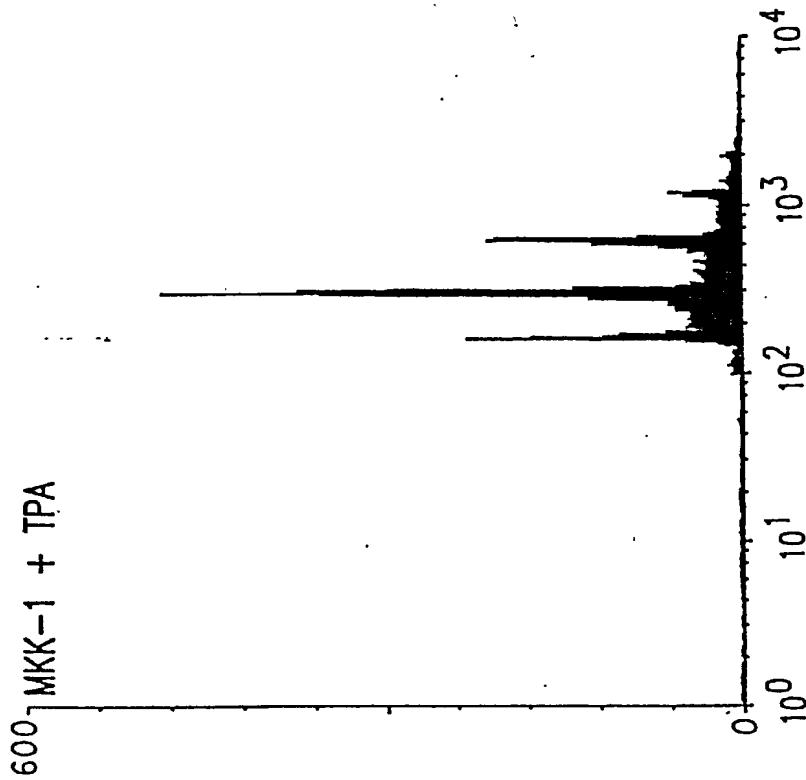


FIG. 14D

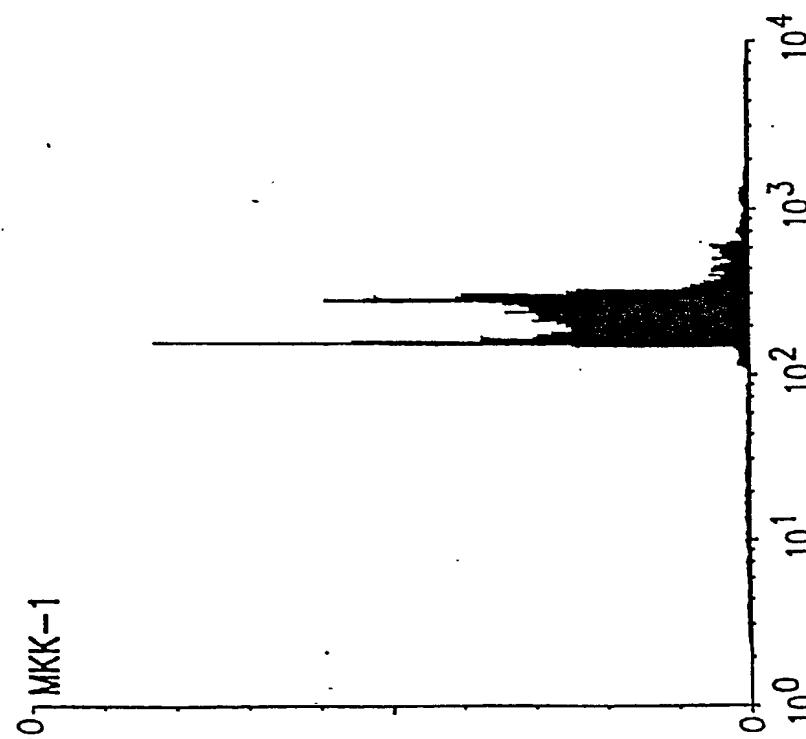


FIG. 14C